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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,613	03/29/2004	Joseph Chang	155634-0158	3185

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EXAMINER

HABERMEHL, JAMES LEE

ART UNIT PAPER NUMBER

2651

DATE MAILED: 04/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/812,613

Applicant(s)

CHANG ET AL.

Examiner

James L Habermehl

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

JE

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1. This Office action is in response to application filed 29 March 2004, which papers have been placed of record in the file.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-5, 7-10, 12-17, 19-22, 24-29, 31-34, 36-41, 43-46, and 48 are rejected under 35 U.S.C. 102(e) as being anticipated by Hirano et al. Hirano et al. meets all the limitations of claims 1, 13, 25, and 37, including a middle diameter (inside of P1), an outer diameter (P1), and a crash stop (7). Hirano et al. shows a control circuit that controls, an equivalent control means for controlling, and a memory that contains a program that causes said controller to control said voice coil motor to move said head from said middle diameter to said outer diameter of said disk and then decelerate movement of said head as said actuator arm (Figures 2-4 and 8, particularly elements 22 and 24-25, and col. 9, lines 3-20). Hirano et al. also shows the steps of moving the head from a middle diameter of the disk to an outer diameter of the disk, and decelerating the head as the actuator arm moves beyond the outer diameter of the disk (Figures 2-4 and 8, and col. 9, lines 3-20).

Regarding claims 2, 14, 26, and 38, the voice coil motor remains energized for a time interval after said head passes said outer diameter of said disk (col. 8, lines 42-54).

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Regarding claims 3-4, 15-16, 27-28, and 39-40, said head is decelerated while said head moves across said ramp (col. 9, lines 17-20).

Regarding claims 5, 10, 17, 22, 29, 34, 41, and 46, movement of the head across said disk is controlled by reading of a Gray code of said disk (col. 8, lines 30-41).

Regarding claims 7, 9, 12, 19, 21, 24, 31, 33, 36, 43, 45, and 48, movement of said head beyond said outer diameter of said disk is controlled by sensing a back emf of said voice coil motor (col. 8, lines 42-54).

Regarding claims 8, 20, 32, and 44, said head is decelerated by applying a reverse current to said voice coil motor (col. 9, lines 17-20 and Figure 10, element 42) because once the target speed is reduced it commands a reverse current to slow the motor down to match the target speed.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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5. Claims 6, 11, 18, 23, 30, 35, 42, and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirano et al. in view of Mazda. Hirano et al. meets all the limitations of the claims for the reasons disclosed above, except it does not show movement of the head across the disk is controlled by sensing a back emf of said voice coil motor.

Mazda Figures 1-2 show movement of the head across the disk is controlled by sensing a back emf of said voice coil motor for the purpose of moving the actuator assembly to the ramp 15 at a constant velocity when the disk drive loses power. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Hirano et al. to enable use of the showing of Mazda of movement of the head across the disk controlled by sensing a VCM back emf, the motivation being moving the actuator assembly to the ramp 15 at a constant velocity when the disk drive loses power.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Takeuchi et al. Figures 1-3, JP2002-319257 Figures 18-22, Tominaga et al. Figures 1-6, Kusumoto Figures 5-11, Utenick et al. Figure 6 show velocity controlled unloading similar to applicant's invention. Moon et al. Figures 3-4 show back EMF velocity control of the actuator. Klassen Figures 3-4, Hirano et al. ('660) Figures 7-8 and 15-16, and Tanner Figure 2 show velocity controlled unloading of the heads.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James L Habermehl whose telephone number is (571)272-7556. The examiner can normally be reached on 8:30-5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (571)272-7843. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Habermehl/jlh
3 April 2005



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